IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	: Kenichiro Kosai et al.	Art Unit	: 1633
Serial No.	: 10/567,010	Examiner	: Burkhart, Michael D.
Filed	: August 9, 2006	Conf. No.	: 9188
Title	: Method Of Preparing A Proliferation-regulated Recombinant Adenoviral Vector Efficiently And Kit For Preparing The Same		

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SUBMISSION OF PRIOR ART DOCUMENTS

Applicants file herewith three PCT patent application publications that were cited during the prosecution of two corresponding foreign applications.

The three publications are Hayashizaki et al., WO 02/070720 ("Hayashizaki"; cited in the corresponding Japanese application), Graham et al., WO 00/52187 ("Graham"; cited in the corresponding European application), and Jakubczak et al., WO 01/9299 ("Jakubczak"; also cited in the corresponding European application).

These three PCT patent application publications came to the attention of Applicants' counsel on June 22, 2011. Applicants submit that these publications do not constitute prior art that is material to patentability of the allowed claims in this application. As such, no Information Disclosure Statement under 37 CFR § 1.56 is required. Nonetheless, Applicants file these three documents for the sole purpose of having a complete record.

Claims 18-37 in this application have been allowed. They cover methods for preparing a proliferation-regulated recombinant adenoviral vector. The methods include a step in which adenovirus E1A and E1B promoters in the E1 region are replaced by multiple cloning sites, as well as a step in which a promoter that is only active in a specific target organ is inserted into each of the multiple cloning sites. Performing the claimed methods gives rise to an adenoviral vector capable of producing adenoviruses that proliferate solely in the specific target organ. Such adenoviruses can be used for gene therapy.

Applicants discuss below why the three publications listed above, i.e., Hayashizaki, Graham, and Jakubczak, do not negate patentability of the allowed claims. Each publication is addressed separately below.

Hayashizaki teaches specific cloning vectors that can accommodate large DNA fragments, as well as a method for efficiently excising such fragments from the cloning vector. See the Abstract. Nowhere does this publication teach or suggest using adenoviral vectors, let alone teach or suggest a method for preparing adenoviral-based vectors.

Graham teaches that recombinant infectious adenoviral DNA can be efficiently constructed by using a recombinase in conjunction with recombinase-recognition sequences that are inserted into two different vectors, neither of which alone can produce adenovirus particles. See the Abstract. This publication also teaches that the infectious adenoviral DNA either has a wild-type E1 region, or has no E1 region at all. See for example Figures 1, 2, 8a, 8b, 8d, 911a, and 12. Note that the E1 region contains both the E1A and E1B gene and their respective promoters. It follows that the infectious adenoviral DNA taught in Graham contains either wild-type E1A and E1B promoters, or it lacks both of these promoters. Like Hayashizaki discussed above, nowhere does Graham teach or suggest a method in which the E1A or E1B promoters are replaced by tissue-specific promoters, as required by the allowed claims in this application.

Turning to Jakubczak, this publication teaches using a recombinase to insert a mutated fiber protein-encoding gene into an adenoviral vector. See the Abstract. Jakubczak also teaches that the adenoviral vector used as a recipient for the fiber-encoding gene is missing the E1 region. See Table 3 in the Specification at page 30. As just mentioned above, the E1 region contains both the E1A and E1B gene and their respective promoters. It follows that the adenoviral vector taught in Jakubczak does not contain either the E1A or E1B promoter. For the same reason set forth above in the discussion of Graham, this publication does not teach or suggest a method in which the E1A or E1B promoters are replaced by tissue-specific promoters.

In sum, none of the three publications filed herewith teach or suggest, alone or in combination, a method for producing a proliferation-regulated recombinant adenoviral vector. Further, the three publications, in combination with any of the prior art references of record in this application, also fail to teach or suggest the subject matter of the allowed claims.

No fee is believed to be due. Please apply any other charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 55801-002US1.

Respectfully submitted,

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